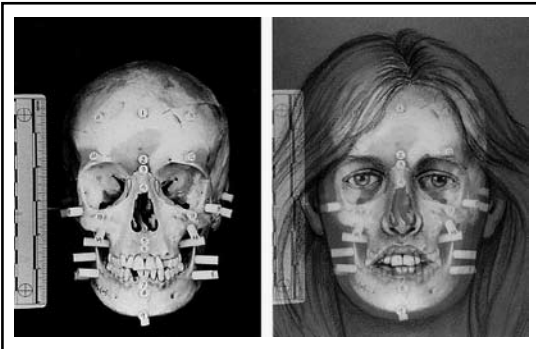


8

THE CREATURE REVEALED

what they didn't look like

To arrive at a more accurate likeness of Neanderthals, we first have to abandon the anthropomorphic bias that has distorted our view for centuries. This won't be easy, as the view that Neanderthals looked like humans has been given a degree of scientific credibility by *forensic facial reconstructions*. This involves the use of computers or clay modelling to recreate people's faces from their skulls. In its correct context (reconstructing human faces) the process works extremely well. This is because we know what the soft tissue features ought to look like and where they're meant to go. The American forensic artist, Karen T Taylor is able to create an accurate reconstruction of a murder victim (*below*) because she



knows how thick human skin is, how large human eyeballs are, and what a human face looks like.

However, while facial reconstruction is also increasingly used by the media and museums to 'bring Neanderthals back to life', a growing number



A sample of computer-generated and three-dimensional models of Neanderthals all reveal the same anthropomorphic bias. Most of them wouldn't look out of place at a Saturday rugby match.

of scholars have come to the same opinion as myself—that this is the most controversial technique in forensic anthropology.

The shortcomings are evident when you note that the skeletal features of chimpanzee and human noses are virtually identical (they're both simply cavities in the skull) and yet we have protruding noses and chimps have flat noses. When it comes to guessing what kind of noses Neanderthals



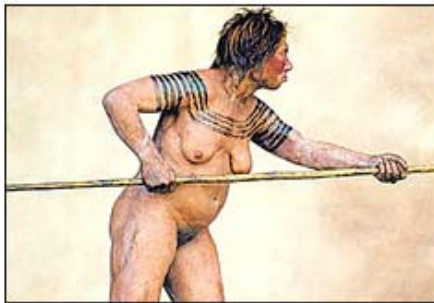
had, most scientists simply assume they would have had protruding noses like ours. The reality is that it's virtually impossible to say for certain what a primate's nose looks like from its nasal cavity. For example, the skull of a proboscis monkey (*left*) would not reveal its pendulous nose because it is composed of soft tissue which is not part of the skull.

Because the soft tissue facial features (skin, lips, ears, etc.) of nonhuman primates are so different from ours, human facial dimensions, organ shapes and textures would never be used to reconstruct a chimpanzee face. And yet Neanderthals have been anthropomorphised to such a degree that human facial data is consistently used to reconstruct Neanderthal faces. A typical example is the face displayed at the Allard Pierson Archaeological Museum in Amsterdam (*right*).

It's not surprising then that almost all modern pictorial and three-dimensional representations of Neanderthals portray them as beetle-browed, large-nosed versions of modern humans—and often they're even clean shaven. Because we have noses that stick out, clear eyes, smooth skin and full lips, it has



Photo : Michael D. O'Neill



The October 2008 issue of National Geographic featured the latest forensic reconstruction—of a female Neanderthal—which took the anthropomorphic trend to new heights, showing her to all intents and purposes as unmistakably human, complete with body tattoos. Even the distinctive Neanderthal brow ridges have been de-emphasised. While this may sell lots of magazines, it is questionable science.

been supposed they had those too. And if humans can attend Harvard, so too can Neanderthals—although they'd need rich parents.

what they really looked like

Once the traditional anthropomorphic approach is put aside, and it is acknowledged that human physiology and behaviour are a one-off case, Neanderthal physiology can be seen in its correct evolutionary context. Neanderthals evolved from the same ancestors as gorillas, chimps and bonobos, who still look like classic primates after ten million years of evolution. Neanderthals almost certainly were not hairless or artistic. They didn't have Angelina Jolie lips, or clear white eyes, or even satin-smooth skin.

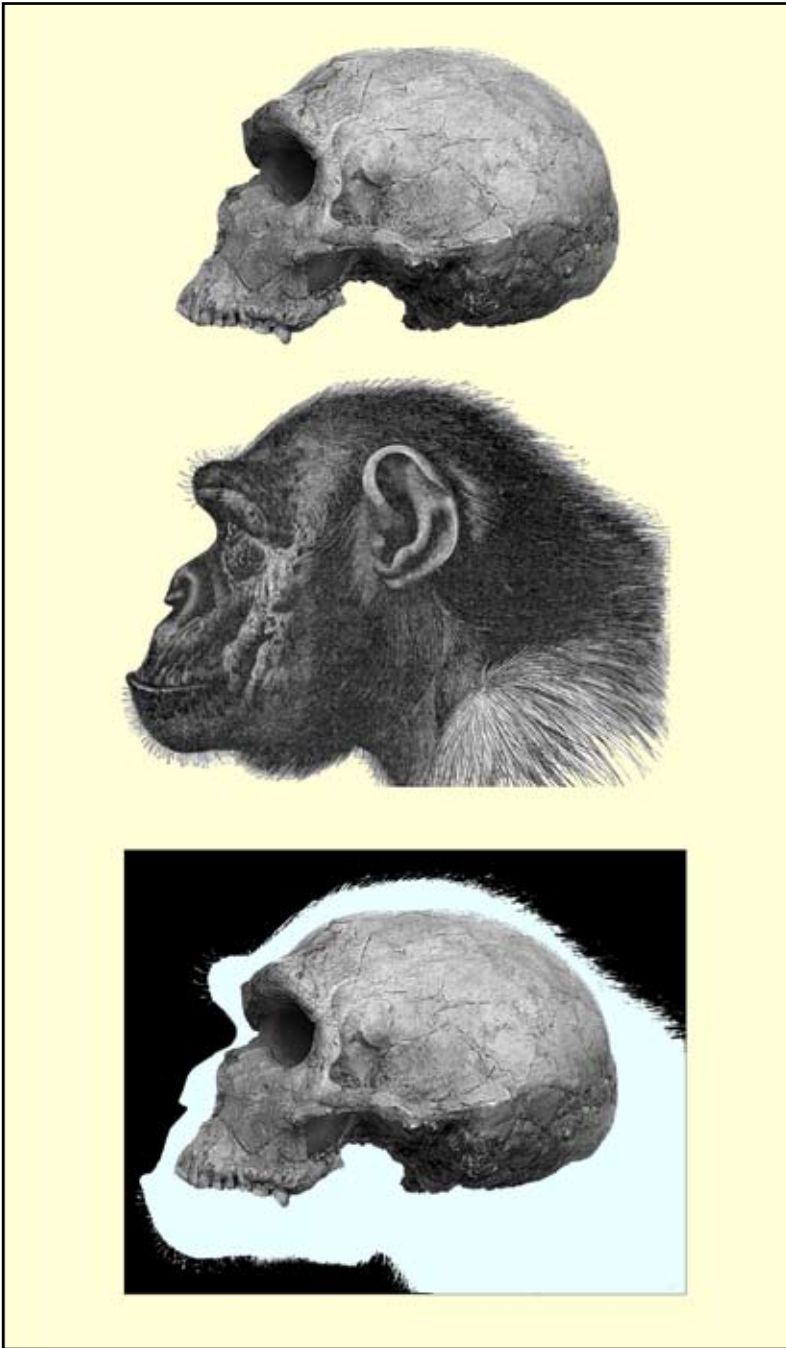
A more realistic Darwinian view argues that, unless powerful and persistent evolutionary forces rendered it absolutely necessary for survival to abandon their ancestral primate appearance, Neanderthals would have continued to look like tall, bipedal apes. After all, the core aspects of primate physiology had been tried, tested and continually refined by natural selection over at least ten million years.

I've nominated two major factors that caused Neanderthal physiology to diverge from primate orthodoxy: their predator lifestyle (including nocturnality) and the icy European climate they evolved in. In all other respects, the ancestral form would tend to prevail.

This review helps us to build up a more accurate identikit picture, revealing for the first time what the average Neanderthal really looked like. The one certainty is that there is not the slightest chance of mistaking one for a New York stockbroker—even dressed in an Armani suit.

From a distance, an approaching Neanderthal would instantly strike you as alien, resembling a tall, heavily muscled gorilla, rendered even more massive by its thick coat of extra long and thick fur. You would feel as if you have just come across the abominable snowman or bigfoot. As it approached, you would be struck by its large bulbous eyes with their vertically aligned slit pupils and brown scleras, shaded by prominent overhanging brow ridges and thick bushy eyebrows. Its eyes are also disturbing because they're so high up in the skull, about where your forehead is. The other striking feature of the face is that the middle area around the nose sticks out in a kind of dog-like muzzle. Its large broad flat nose, with slightly moist, black nostrils that twitch to sniff the air for tell-tale scents, occupies a disproportionate area.

The skin on the face and hands is tough, leathery and heavily wrinkled but, because of the enormous variation in skin colour among primates,



Neanderthals are depicted as looking like humans, but the European Neanderthal cranium (top) fits neatly into a chimp profile (bottom), suggesting Neanderthals looked more apelike than human.

A surprisingly accurate 1909 depiction of a Neanderthal by Frantisek Kupka for the Illustrated London News.



it is impossible to say what colour its face is. The lips are so thin as to be practically nonexistent (which means that frostbite, sunburn and melanomas would not be a problem).

Its teeth are twice as large as human teeth but lack the large pointed canines of the big cats (indicating that this creature would not tear raw flesh from prey animals with its teeth but would use stone knives to cut it off). And (according to research conducted in 2008 by anthropologists Yoel Rak and William Hylander) its mouth can open unusually wide—much wider than human mouths—which would allow the Neanderthal to take extremely large bites, possibly as an adaptation to the size of the food it eats.³⁵¹ Finally, judging by the size of the jaw where the chewing muscles attach, the Neanderthal has a tremendous bite force.

Rather oddly, the creature doesn't have a well-defined chin. In fact, it's hard to discern a chin at all, as the slit mouth simply curves down to merge with the massive neck muscles. The same muscles snake around its neck to form a broad collar that runs up the side of its head, giving the impression it has no neck. It is these muscles that contribute to its enormous upper body strength.

As for its body, it is so heavily muscled, it makes a human body builder look weedy by comparison. Side on, the straighter, more inflexible spine, the stooped stance and lack of defined buttocks give it an unusual gait as it strides along. It doesn't walk like any human you've ever seen. All in all,

this is a strange and fearsome creature indeed.

And to top it off, German researchers who re-examined two Neanderthal spines (from Kebara 2 and Shanidar 3) in 2008 reported that both individuals displayed kyphosis—they were hunchbacks. This was most unexpected and, what's more, their hunched backs weren't the result of injury, disease or old age. The authors, Jochen Weber and Carsten Matthias Pusch believe the condition was part of their natural anatomy.

that's more like it

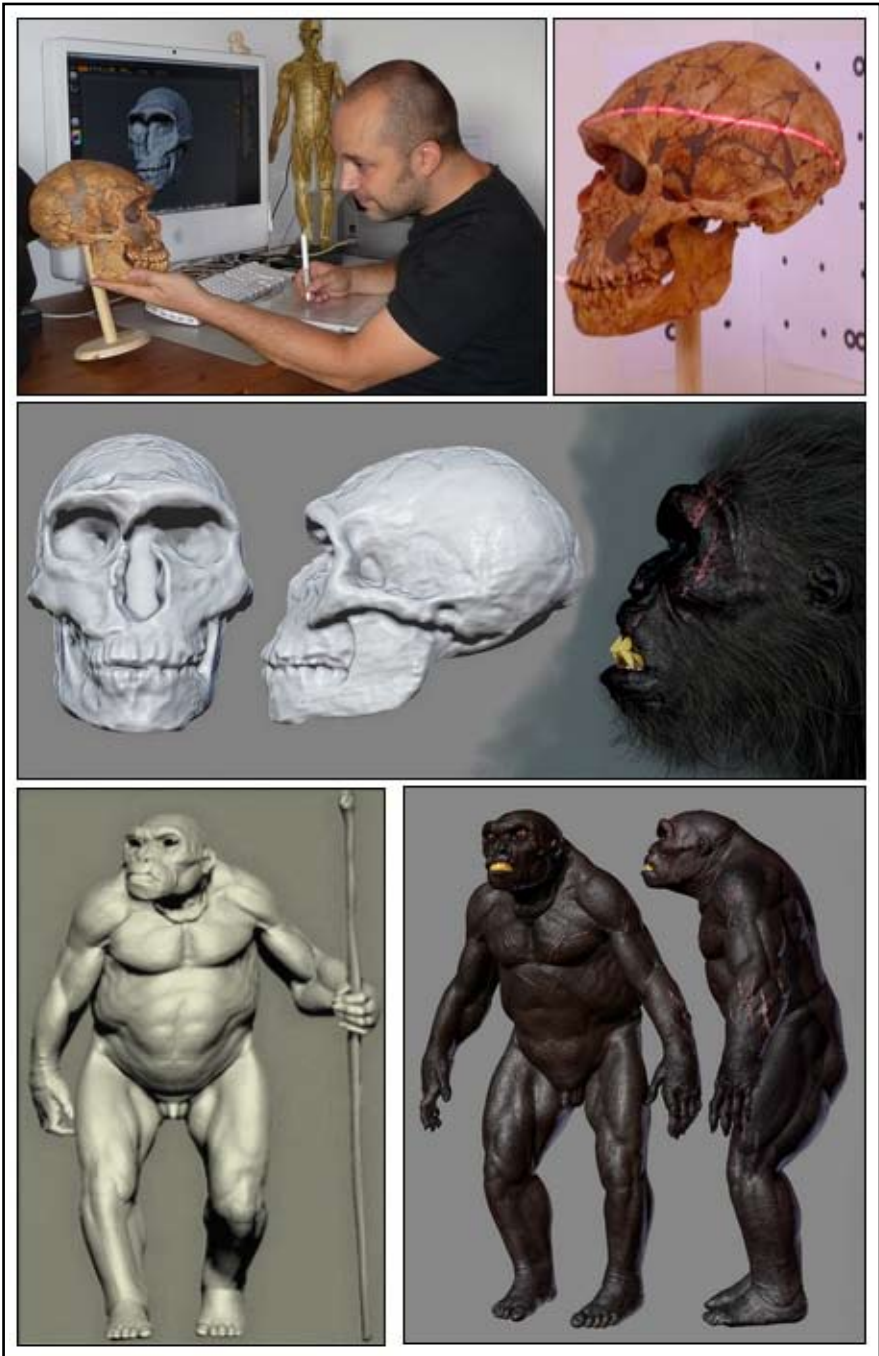


Like modern primates, the skin of Neanderthals would have been tough, durable and heavily wrinkled—certainly not smooth like that of modern humans.

NP Theory can't say for certain exactly what Neanderthals looked like. Nobody can. Maybe one day, the frozen remains of an individual will be defrosted from its icy grave and we'll finally gaze on the face that really did launch a thousand ships. But, as the next best thing, I commissioned one of the world's best computer modellers to create a forensic reconstruction of an adult Neanderthal based on NP theory. Madrid-based digital sculptor Arturo Balseiro took up the challenge and, after many exchanges of emails, produced the extraordinary reconstructions displayed here.

To ensure accuracy, we scanned a high quality cranium cast of the La Ferrassie Neanderthal from France. The resulting pictures of the La Ferrassie adult male provide a far more accurate and nuanced portrait of the species than the current gallery of anthroporphic look-alikes you see in the popular press.

This was a very exciting process for me. As we watched the creature slowly emerge, we could tell from our own visceral reactions that we were on the right track, that the creature was triggering our innate Neanderthal responses. For the first time in 28,000 years, we were gazing into the eyes of our nemesis—the beast that had hunted our ancestors to the point of extinction.



The forensic reconstruction of the La Ferrassie Neanderthal began with a computer scan of its skull. Digital sculptor Arturo Balseiro (pictured) then used NP theory to reconstruct detailed features of its anatomy.



Armed with a flint-tipped spear, a Eurasian Neanderthal peers out from its forest lair. Less hairy than their European cousins, Eurasian Neanderthals were nevertheless covered in a thick coat of protective fur which probably moulted in summer.



Twenty-eight thousand years after the last Neanderthal roamed the earth, forensic science is able to reconstruct a far more accurate representation of a Eurasian Neanderthal. Their thick coat of fur, hunched back, bow legs and distinctive gait added to their unique appearance.



A creature that looks like an athletic gorilla but uses complex weapons to hunt its prey is so foreign and counterintuitive it has hampered our understanding of Neanderthals for one hundred years. Anthropologist John Shea's description of Neanderthals as "wolves with knives" comes close to describing their paradoxical nature.